

**B.SC. IN RADIOGRAPHY-IV SEMESTER**

**DECEMBER 2020**

Time: 3 Hours

Max. Marks: 60

**PHYSICS OF RADIOLOGY**

**Q.P. Code:1966**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS(All are compulsory):**

**2 X 10 = 20**

1. Name the quality assurance tests for x-ray equipments. Describe any five QA tests in detail.
2. Describe about dedicated x-ray mammography unit.

**SHORT ESSAY QUESTIONS(All are compulsory):**

**5 X 5= 25**

3. Mobile x-ray unit
4. Construction and working of image intensifier tube
5. Linear tomography and its principle
6. Switches
7. Earthing

**SHORT ANSWER QUESTIONS(All are compulsory):**

**5 X 3 = 15**

8. Inverse square law
9. Rectification
10. Electromagnetic spectrum
11. Magnification radiography
12. Anode angle and its importance

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**SECOND SEMESTER -M.Sc. NUTRITION AND DIETETICS**  
**DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**NUTRITIONAL BIOCHEMISTRY - II**

**Q.P. Code: 1955**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (All are compulsory):**

**2 X 15 = 30**

1. Discuss glycolysis in RBC's – add a note on Coris cycle
2. Discuss the metabolism of tryptophan add a note on Hartnups disease

**SHORT ESSAY QUESTIONS (All are compulsory):**

**5X10=50**

3. Discuss the metabolism of chylomicrons
4. List any 5 coenzymes. Mention the reaction in which they act as coenzymes
5. Outline the salvage pathway for purine biosynthesis. Add a note on LeschNyhan Syndrome
6. Discuss the synthesis of vitamin D in the body. Add a note on its activation
7. Outline the pathway of citric acid cycle. Add a note on its regulation

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**FOURTH SEMESTER -M.Sc. NUTRITION AND DIETETICS**  
**DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**THERAPEUTIC NUTRITION-II**

**Q.P. Code: 1961**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS: 2 X 15 = 30**

1. Discuss anorexia nervosa, its pathophysiology and dietary management
2. Explain metabolic alterations in diabetes mellitus

**SHORT ESSAY QUESTIONS: 5X10=50**

3. Comment on artificial sweeteners
4. Describe nutritional requirements of athletes
5. Write a note on medical nutrition therapy for angina pectoris
6. Discuss nutritional requirements of cancer patients
7. Describe gout, its pathophysiology and dietary management

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**SECOND SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**BIOENGINEERING AND BIOINFORMATICS**

**Q.P. Code: 1544**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. Write a note on PCR, types and its applications.
2. Describe rDNA technology and its applications in health sciences.
3. Write a note on bioinformatics and its applications in sequence information sources.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. Sanger sequencing.
5. Explain DNA modifying enzymes.
6. How phagemid are useful as Vector explain.
7. Describe transgenic plants.
8. Write a note on Gene therapy.
9. Describe swissprot/Treml.
10. Explain bacterial artificial chromosomes.

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**SECOND SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PAPER – I: PREVENTIVE & SOCIAL MEDICINE**

**Q.P. Code: 1704**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (All are compulsory):**

**4 X 15 = 60**

1. Discuss the principles and dynamics of disease transmission in detail.
2. What will the long term impact of the Covid 19 pandemic on the Indian and global healthcare system be? Discuss in detail.
3. Discuss the major health indications in detail.
4. Discuss case control and Cohort studies in detail with examples.

**SHORT ESSAY QUESTIONS (Answer any TWO):**

**2 X 10= 20**

5. Discuss Bhole committee in detail.
6. Role of WHO in health.
7. Compare and contrast the spending on health and major health indications of India with that of a developed country.
8. What is the recommended minimum Centre: population ratio of sub centres, primary health centres and Community healthcentres as per the IPHS standard? What is the current number of Sub centres, primary health centres and Community health centres in India?

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**SECOND SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**EPIDEMIOLOGY (PART I & PART II)**

**Q.P. Code:1804**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Assume that you have been commissioned to design a prevention program for HIV/AIDS. Will your prevention program approach be to target high risk population or general population as a whole, justify. Design an appropriate prevention program and explain in detail your approach. (5+10)
2. A new screening test for HIV/AIDS produced following results based on the data, calculate the test's respectively. Interpret your finding. Would you recommend this test as screening test for HIV/AIDS in general population? If yes/no justify.

Screening test	True disease status	
	Positive	Negative
Positive	92	12
Negative	16	365

**SHORT ESSAY QUESTIONS:**

**5 X 10= 50**

3. An epidemiologist hypothesized that coffee drinking is associated with angina pectoris. To test this hypothesis, he designed a case-control study where the cases were drawn from patients attending a cardiac care hospital, the control who had no medical history of angina were drawn from another hospital in the same community that specialized in the treatment and management of gastric disorders. Did the epidemiologist design an appropriate study? If yes/no justify. Discuss the advantages or disadvantages in this study. How can it be modified if required?
4. Discuss dynamics of disease transmission.
5. Discuss active and passive surveillance with appropriate example.
6. Describe the steps in investigation of an epidemic with suitable example.
7. Explain measurement bias and selection bias in detail with examples.

**FOURTH SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**MATERNAL & CHILD HEALTH NUTRITION (PART I & II)**

**Q.P. Code: 1810**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (All are compulsory):**

**2 X 15 = 30**

1. What are the causes of neo-natal mortality in India? Explain in detail preventive and social measures required to reduce neo-natal mortality?
2. Describe factors associated with Protein Energy Malnutrition (PEM). Explain in detail preventive measures for PEM

**SHORT ESSAY QUESTIONS(All are compulsory): 5 X 10 = 50**

3. Components of National Iodine Deficiency Disorders Control Program?
4. Social problems encountered by girl child
5. Mother and child tracking system (MCTS)
6. Bio-chemical indicators of nutritional status
7. Tests of pasteurized Milk

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**SECOND SEMESTER -M.Sc. IN PSYCHOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PSYCHOLOGICAL STATISTICS**

**Q.P. Code: 1936**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS**

1a. Define statistics & Biostatistics? Describe various graphs of presentation of numerical data with examples. 15

Or

1b. Describe the process of tabulating the data. Convert the data given below in to grouped frequency distribution with class interval of 5.

68	87	89	85	82	87	84	85	89	88
86	70	86	78	70	86	79	69	81	88
77	75	78	61	79	90	86	78	89	81

2a. Describe various measures of central tendency? Compute mean, median & mode for the following data. 15

84	80	82	67	68	72	70	96	62	72
67	80	91	78	82	76	73	86	67	83

Or

2b. Describe different measures of dispersion? Find out the standard deviation for the following scores given.

Scores 42 37 64 50 58 43 38 41 47 52

3a. What are the tests of significance? Delineate the condition in which these test are used. 15

Or

3b. Name the non-parametric tests? States its underlying assumptions.

4a. Describe the nature of correlation. Compute spearman's Rank correlation Coefficient for the following data of 10 students test scores and draw conclusions. 15

Verbal Test scores	22	24	27	23	30	35	32	28	31	25
Numerical test scores	38	34	22	30	25	18	20	32	24	30

Or

4b. Define test of significance. Explain Independent t-test with suitable examples.

**Write short notes on any Four of the following**

**4 X 5 =20**

5. One way ANOVA.
6. Regression analysis.
7. Normal distribution.
8. Standard error of mean.
9. Types of correlations.
10. Use of computer in statistical analysis.

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**KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.**  
(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited 'A' Grade by NAAC (2<sup>nd</sup> Cycle)

Placed in 'A' Category by MHRD (GoI)

**SECOND SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION**  
**DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PAPER I: ANATOMY**

**Q.P. Code: 1404**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 10 = 20**

1. Describe the stomach under following heads: (2+4+2+2)
  - a) Location
  - b) Parts and relations
  - c) Blood supply
  - d) Applied anatomy
  
2. Describe the spinal cord under following heads: (4+2+2+2)
  - a) Gross features
  - b) Organization of tracts
  - c) Blood supply
  - d) Applied anatomy

**SHORT ESSAY QUESTIONS:**

**9 X 5= 45**

3. Relations of kidney
4. Histology of testis
5. Blood supply of heart
6. Bronchopulmonary segments of right lung
7. Gross features of cerebellum
8. Posterior mediastinum
9. Relations of thyroid gland
10. Histology of lung
11. Histology of ovary

**SHORT ANSWER QUESTIONS:**

**5 X 3 = 15**

12. Enumerate ligaments of liver.
13. Draw and label 3 structure of neuron
14. Name the ligaments of urinary bladder
15. Functions of Pericardium
16. Any **three** differences between right & left lung

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**FOURTHSEMESTER -M.Sc. MEDICAL IN PHYSIOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER I: PHYSIOLOGY  
(Respiratory System, Environmental Physiology, Exercise Physiology)**

**Q.P. Code: 1417**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 20 = 40**

1. Describe the neural regulation of respiration in detail. Add a note on ventilation perfusion ratio. (15+5)
2. Discuss the pattern of respiration in subjects exposed to hypoxia of long duration. Add a note on oxygen therapy. (15+5)

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

3. Discuss indications of artificial respiration and various methods adopted.
4. Caisson's disease.
5. Benefits of exercise in health & disease.
6. Oxygen dissociation curve & factors affecting it.
7. Functional residual capacity.
8. Describe the respiratory adjustments during exercise.

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**FOURTH SEMESTER -M.Sc. MEDICAL IN BIOCHEMISTRY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER I: BIOCHEMISTRY  
(Metabolism -I)**

**Q.P. Code: 1419**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>20 X 2 = 40</b>
1. a) Enumerate the steps of glycogen metabolism with diagram add a note on its regulation. b) Explain the amphibolic role of TCA cycle and add a note on its regulation.	(10+10)
2. a) Explain the important products synthesized from tyrosine. Mention the disorders associated with tyrosine and phenylalanine metabolism b) Write a note on Meister's cycle c) Explain the important products synthesized from glycine	(10+4+6)
<b>SHORT ESSAY QUESTIONS:</b>	<b>6 X 10 = 60</b>
3. What is the difference between substrate level phosphorylation and oxidative phosphorylation?	
4. Write a note on glucose tolerance test	
5. Name the different protein complexes involved in electron transport chain. Add a note on its inhibitors.	
6. Write the role of nitric oxide in the body.	
7. Explain urea cycle with a neat labelled diagram and its disorders.	
8. Define Transmethylation? Add a note on homocystinuria.	

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**FOURTHSEMESTER -M.Sc. MEDICAL IN MICROBIOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER I: MICROBIOLOGY**

**Q.P. Code: 1421**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 20 = 40**

1. Name the pyogenic cocci. Discuss the toxins and enzymes produced by staphylococcus aureus. Add a note on methicillin resistant staphylococcus aureus and MRSA detection methods. (2+9+9)
2. Classify clostridia of medical importance. Describe the pathogenicity, laboratory diagnosis of clostridium welchii. Add a note on prophylaxis of gas gangrene. (4+10+6)

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

3. Post streptococcal sequelae.
4. Laboratory diagnosis of Gonorrhoea.
5. Bacillus cereus food poisoning.
6. Describe multi drug resistant tuberculosis (MDR-TB)
7. Describe laboratory diagnosis of Nocardia.
8. Describe laboratory diagnosis of meningitis caused by Meningococcal Meningitis.

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**SIXTH SEMESTER -M.Sc. MEDICAL IN BIOCHEMISTRY**  
**DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER I: BIOCHEMISTRY**  
**(Clinical and Diagnostic Biochemistry Part -I)**

**Q.P. Code: 1435**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>20 X 2 = 40</b>
1. What is atherosclerosis? Explain the biochemical changes in the development of atherosclerosis. Add a note on reverse cholesterol transport	(2+10+8)
2. Classify and group liver function tests according to the function and pathological change in the organ. Add a note on obstructive jaundice	(10+10)
<b>SHORT ESSAY QUESTIONS:</b>	<b>6 X 10 = 60</b>
3. What is the role of clearance tests in renal function? Discuss clearance test in detail	
4. Classify acid base disorders. Explain causes and compensation of metabolic acidosis	
5. Enlist the tests done under IEM. Discuss the derangements of plasma lactate	
6. Describe the structure of actin and myosin. Outline the steps of muscle contraction	(5+5)
7. Explain the components and functions of extracellular matrix	(5+5)
8. Name blood buffers. Describe the alkali reserve in blood by Henderson-Heseelbalch equation	(3+7)

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**B.SC. IN RADIOGRAPHY-IV SEMESTER**

**DECEMBER2020**

Time: 3 Hours

Max. Marks: 60

**RADIOGRAPHY TECHNIQUE-I**

**Q.P. Code:1967**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS(All are compulsory):**

**2 X 10 = 20**

1. Draw a labelled diagram of lumbar vertebrae explain in detail flexion and extension radiography views of lumbar vertebrae.
2. Discuss in detail about pediatric radiography.

**SHORT ESSAY QUESTIONS(All are compulsory):**

**5 X 5= 25**

3. Lateral view of sellaturcica
4. Judd method for cervical spine
5. Orthopantomography
6. Sky cline view of patella
7. Frog leg projection

**SHORT ANSWER QUESTIONS(All are compulsory):**

**5X 3= 15**

8. Differences between abdomen and KUB radiography
9. Anterior oblique view of petrous bone
10. Tangential projection for nasal bones
11. Lateral view of neck
12. Mortix view

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**SECOND SEMESTER -M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PRINCIPLES OF FOOD SCIENCE**

**Q.P. Code: 1956**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS(All are compulsory):**

**2 X 15 = 30**

1. Explain the nutritional and functional role of minerals. What is the effect of processing on minerals?
2. Explain the functional properties of lipids. What deteriorative changes are seen in fats and oils?

**SHORT ESSAY QUESTIONS (All are compulsory):**

**5X10=50**

3. Properties of food
4. Gelatinization and retrogradation of starch
5. Advantages of food processing
6. Protein concentrates, hydrolysates and isolates
7. Effect of processing in milk and milk product

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**FOURTHSEMESTER -M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**NUTRACEUTICALS AND FUNCTIONAL FOOD**

**Q.P. Code: 1962**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Explain resistant starch and its health benefits
2. Write in detail about organosulphur compounds, its sources and beneficial health effects.

**SHORT ESSAY QUESTIONS:**

**5X10=50**

3. Write about the active biodynamic principles in spices
4. Briefly write a note on protease inhibitors
5. What is prebiotics, post biotics and symbiotics
6. Classify functional foods & nutraceuticals. Add a note on nutraceuticals
7. Write a note on quality assurance of probiotics and safety

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**SECOND SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**CELL BIOLOGY**

**Q.P. Code: 1545**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS (Answer Any TWO):</b>	<b>2 X 15 = 30</b>
1. a) Explain structure and function of Nucleus	(10)
b) Explain the role of Ribosomes in protein synthesis	(5)
2. a) What are G proteins? Explain the role of G proteins	(7)
b) What are receptors? Explain cell surface receptors	(8)
3. a) Explain apoptosis and Necrosis	(8)
b) Explain the role of cell cycle check points	(7)
<b>SHORT ESSAY QUESTIONS (Answer any FIVE):</b>	<b>5 X 10 = 50</b>
4. Explain a note on endoplasmic Reticulum	
5. Describe the chemical composition and functions of ribosomes	
6. Explain Ras MAPK signaling pathway	
7. Explain cytoskeleton structure and function	
8. G-coupled proteins	
9. Briefly explain general principle of cell communication	
10. With neat labelled diagram, explain structure of bacterial cell.	

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**SECOND SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PAPER – II: HEALTH FINANCE & HEALTH ECONOMICS**

**Q.P. Code: 1705**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (All are compulsory):**

**4 X 15 = 60**

1. What percentage of GDP was spent on the following in India in 2019: Total healthcare expenditure; government spending on healthcare; out of pocket expenditure on healthcare; central budget for health; combined state government budgets for health? Express these percentages in crore rupees.
2. Discuss Keynesian Macroeconomic theory in detail.
3. What is Out Of Pocket (OOP) health expenditure? How can OOP be reduced in India?
4. With regard to healthcare, discuss Marginal Productivity, Wages, Rent, Interest and Profit.

**SHORT ESSAY QUESTIONS (Answer any TWO):**

**2 X 10 = 20**

5. Discuss the Principle of Substitution in detail.
6. Is government reimbursement of private health insurance an efficient way of achieving universal health care? Discuss.
7. Discuss the recommendations of the Jain Committee, Mudaliar Committee, Mukherjee Committee and Srivastava Committee.
8. Discuss Cost Benefit Analysis in a hospital.

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**SECOND SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**BIostatISTICS (PART I & II)**

**Q.P. Code: 1805**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Enumerate and describe various sampling designs.
2. Explain the following with suitable example.
  - a) Simple correlation coefficient
  - b) Multiple correlation coefficient
  - c) Partial correlation coefficient

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Describe Poisson distribution with example
4. Discuss the role of tests of significance in comparison of different sets of data. Explain any one parametric test with appropriate example.
5. Explain point and interval estimation with suitable example. Discuss its relevance in public health practice.
6. Describe the difference between a one tailed and two-tailed test. Explain with example when will you use one-tailed and two-tailed test in public health practice.
7. Illustrate Mann-Whitney test with example.

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**FOURTH SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**DEMOGRAPHY AND FAMILY PLANNING**

**Q.P. Code: 1811**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (All are compulsory):**

**2 X 15 = 30**

1. Describe in detail steps for evaluation of family planning services
2. What are the indicators of demographic trends? Briefly write about them.

**SHORT ESSAY QUESTIONS (All are compulsory): 5 X 10 = 50**

3. Couple protection rate
4. List national socio-demographic goals to be achieved by 2010
5. Social impact of low stationary stage
6. Social and health impact of illegal abortion
7. Write a note on demographic cycle

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**SECOND SEMESTER - M.Sc. IN PSYCHOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**COUNSELING AND GUIDANCE**

**Q.P. Code: 1937**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number** **Marks**

**LONG ESSAY QUESTIONS**

1a. Define Psychological counselling and discuss the principles of guidance and counselling.

Or 15

1b. Evaluate different types of counselling.

2a. Critically evaluate Holland's theory of vocational personalities.

Or 15

2b. Discuss the contributions of Roger for counselling theories.

3a. Bring out the professional qualities of a counsellor.

Or 15

3b. Explain the counselling process.

4a. Describe in detail the educational counselling.

Or 15

4b. Discuss the importance of health counselling in present scenario.

**Write short notes on any Four of the following**

**4 X 5 = 20**

5. Theory of work adjustment.

6. Erikson's theory of development.

7. Scope of Guidance.

8. Ethical issues in counselling.

9. Super's career development theory.

10. Personal qualities of counsellor.

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**SECOND SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION  
DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PAPER II: PHYSIOLOGY**

**Q.P. Code: 1405**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 10 = 20**

1. Name the thyroid hormones. Explain their synthesis, actions of these hormones. Add a note on disorders associated with it. (2+2+4+2)
2. Trace the visual pathway with a diagram. Explain the effects of lesion along the different sections of the pathway. (6+4)

**SHORT ESSAY QUESTIONS:**

**9 X 5 = 45**

3. Classify sensory receptors with examples.
4. Different phases of Deglutition.
5. Actions of oestrogen and progesterone on reproductive cycle.
6. Differences between cortical & medullary nephrons
7. Trace the pathway for fine touch
8. Movements of large intestine
9. Explain the hormones of adrenal cortex
10. Composition & functions of CSF
11. Juxtaglomerular apparatus

**SHORT ANSWER QUESTIONS:**

**5 X 3 = 15**

12. List the extrapyramidal tracts
13. Disorders of growth hormone
14. Functions of middle ear
15. Factors regulating spermatogenesis
16. Functions of Gallbladder

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**FOURTH SEMESTER - M.Sc. MEDICAL IN PHYSIOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER II: PHYSIOLOGY  
(Gastrointestinal Tract, Nutrition, Renal System)**

**Q.P. Code: 1418**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 20 = 40**

1. Discuss the pathophysiology of peptic ulcer.
2. Describe mechanisms involved in concentration of urine.

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

3. Movements of small intestine.
4. Composition, mechanism of secretion functions and regulations of pancreatic juice.
5. Enterohepatic circulation of bile salts & its significance.
6. Micturition reflex.
7. Renal clearance tests.
8. Juxta glomerular apparatus.

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**FOURTHSEMESTER -M.Sc. MEDICAL IN BIOCHEMISTRY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER II: BIOCHEMISTRY  
(Metabolism-II)**

**Q.P. Code: 1420**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 20 = 40</b>

1.
  - a) Name the ketone bodies. Discuss the Ketogenesis and ketolysis. Add a note on ketosis. (10)
  - b) Enumerate the steps of cholesterol biosynthesis with its regulation. Add a note on atherosclerosis. (10)
2.
  - a) Write in detail the denovo synthesis of purine nucleotides with its regulation. Add a note on inborn errors associated with it. (10)
  - b) What is gout? Mention the causes, clinical manifestations and treatment of gout. (10)

<b>SHORT ESSAY QUESTIONS:</b>	<b>6 X 10 = 60</b>
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3. What is fatty liver and mention its causes? Add a note on lipotropic factors.
4. What is detoxification? Explain phase two reactions with suitable example.
5. Draw a neat labelled diagram of structure of lipoprotein and add a note on lipoprotein (a)
6. Explain multienzyme complex of fatty acid synthase.
7. Write a note on reverse cholesterol transport
8. Write the steps involved in Ketogenesis and ketolysis with its regulation.

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**FOURTHSEMESTER -M.Sc. MEDICAL IN MICROBIOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER II: MICROBIOLOGY**

**Q.P. Code: 1422**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 20 = 40**

1. Name spirochetes of medical importance along with diseases caused. Describe the pathogenicity. Add a note on laboratory diagnosis of leptospirosis (Weil's disease) (3+6+11)
2. Enumerate the salmonella causing enteric fever. Describe the pathogenesis and clinical features. Discuss the laboratory diagnosis of enteric fever. (3+6+11)

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

3. Significant bacteriuria
4. Helicobacter pylori.
5. Non sporing anaerobes.
6. Q-fever.
7. Trachoma-inclusion conjunctivitis (TRIC agents).
8. Laboratory diagnosis in a case of plague.

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**SIXTH SEMESTER - M.Sc. MEDICAL IN BIOCHEMISTRY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 100

**PAPER II: BIOCHEMISTRY  
(Clinical and Diagnostic Biochemistry Part -II)**

**Q.P. Code: 1436**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number** **Marks**

**LONG ESSAY QUESTIONS:** **2 X 20 = 40**

1. What is cancer? Explain in detail etiological factors for cancer. Add a note on common anti-cancer drugs. (2+12+6)
2. What are the principle, technique and different types of Electrophoresis? Describe its applications. (2+6+4+8)

**SHORT ESSAY QUESTIONS:** **6 X 10 = 60**

3. Explain the terms preanalytical variables, accuracy, precision, specificity and sensitivity. (2+2+2+2+2)
4. Diagrammatically explain the principle and components of pH meter. Outline its uses (3+3+4)
5. Explain the biological effects of radiation. Add a note on radiation protection (7+3)
6. Discuss the etiopathogenesis and management of Parkinsonism (5+5)
7. What is environmental pollution? Discuss the sources and effects of common air pollutants. (2+4+4)
8. Enlist protein misfolding disease. Write in detail about Alzheimer's disease (3+7)

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**B.SC. IN RADIOGRAPHY-IV SEMESTER**

**DECEMBER 2020**

Time: 3 Hours

Max. Marks: 60

**QUALITY CONTROL, RADIOBIOLOGY AND RADIATION SAFETY IN  
RADIO DIAGNOSIS/ IMAGING**

**Q.P. Code:1968**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS**

**2 X 10 = 20**

1. Discuss briefly the factors affecting the calculation for primary and secondary shielding
2. Discuss briefly radiation signages with the help of diagrams

**SHORT ESSAY QUESTIONS (All are compulsory):**

**5 X 5= 25**

3. Acute radiation syndrome
4. Discuss in detail cell radio sensitivity
5. Compare TLD and optically stimulated luminescence dosimeter
6. Towne's view
7. Protection in radiography

**SHORT ANSWER QUESTIONS(All are compulsory):**

**5X 3= 15**

8. Occupational exposure limits
9. Ten day rule
10. Half value thickness
11. Tissue weighting factor
12. Equivalent and effective dose

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**B.SC. IN ANESTHESIA TECHNOLOGY/PERFUSION TECHNOLOGY/CARDIAC CARE TECHNOLOGY -IV SEMESTER DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**APPLIED PHARMACOLOGY**

**Q.P. Code:1969**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number** **Marks**

**LONG ESSAY QUESTIONS(Answer any TWO):** **2 X 10 = 20**

1. Enumerate various types of intravenous fluids. Discuss their therapeutic uses with suitable examples? (4+6)
2. Classify fluoroquinolones. Explain the mechanism of action, therapeutic uses and adverse effect of ciprofloxacin? (3+1+4+2)
3. Classify anti-coagulant drugs. Explain the mechanism of action, therapeutic uses and adverse effect of heparin? (3+1+3+3)

**SHORT ESSAY QUESTIONS (Answer any SIX)** **6 X 5 = 30**

4. Name **five** pre-anesthetic medication and their therapeutic uses.
5. Name **five** anti-arrhythmic drugs, their therapeutic uses and adverse effect
6. Name **five** iron preparation, their therapeutic uses and adverse effect
7. Discuss **five** drugs in management of congestive cardiac failure
8. Mention **five** benzodiazepam their therapeutic uses and adverse effect
9. Name **five** inhalational general anesthetics their therapeutic uses and adverse effect
10. Name **five** penicillin their therapeutic uses and adverse effect

**SHORT ANSWER QUESTIONS (All are compulsory):** **10 X 3 = 30**

11. Name **three** anti-tubercular drugs their therapeutic uses and adverse effect
12. Mention **three** merits and de-merits of combining lignocaine and adrenaline
13. Name **three** immunomodulatory drugs their therapeutic uses and adverse effect
14. Name **three** cephalosporin their therapeutics uses and adverse effect
15. Discuss **three** aminoglycosides their therapeutics uses and adverse effect
16. Name **three** barbiturates their therapeutics uses and adverse effect
17. Mention **three** advantages co-trimoxazole
18. Mention **three** therapeutics uses and adverse effect of nitroglycerine
19. Mention **three** clinical uses of alcohol
20. Name **three** anti-epileptic drugs their therapeutic uses and adverse effect

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**SECOND SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**FOOD MICROBIOLOGY AND SAFETY**

**Q.P. Code: 1957**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS(All are compulsory):**

**2 X 15 = 30**

1. Enumerate the factors affecting the growth of microorganisms. How does this influence the preservation of foods (10+5)
2. Explain the different food laws in India to safeguard the health of the consumers

**SHORT ESSAY QUESTIONS (All are compulsory):**

**5 X 10 = 50**

3. Fermented dairy products
4. Naturally occurring toxicants in plant and animal foods
5. Quality control of foods
6. Safety aspects of beverages
7. Food borne infections

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**SECOND SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**RESEARCH METHODOLOGY AND BIOSTATISTICS**

**Q.P. Code: 1546**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. Methods of presentation, measures of central tendency
2. Define and discuss parametric and non-parametric tests with suitable examples
3. Writing a scientific article

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10= 50**

4. Explain concepts and methods for calculating sample size
5. Regression method and its applications
6. EXCEL –managing data files and analysis
7. Discuss the importance of research title in a proposal
8. Explain structure of Ph.D thesis.
9. Explain qualitative and quantitative research
10. Discuss research methodology and types of research

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**SECOND SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PAPER – III:  
HEALTH/HOSPITAL MANAGEMENT ORGANIZATION  
AND MEDICAL ETHICS**

**Q.P. Code: 1706**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number** **Marks**

**LONG ESSAY QUESTIONS (All are compulsory):** **4 X 15 = 60**

1. Discuss Continuous quality improvement in hospitals in detail.
2. How can the government ensure high quality care in private hospitals? Discuss.
3. Discuss Performance Evaluation of a Hospital in detail.
4. Discuss the term ethics. Enumerate the role and functions of Institution ethics committee. Add a note on malpractice and negligence (2+8+5)

**SHORT ESSAY QUESTIONS (Answer any TWO):** **2 X 10= 20**

5. Medical Termination of Pregnancy Act 1971 (MTP Act)
6. Discuss informed Consent in detail with examples.
7. With regard to the Indian Constitution, discuss the Preamble and Fundamental Rights.
8. Public Private Partnership in healthcare.

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**SECOND SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**EPIDEMIOLOGY OF INFECTIOUS & NON-COMMUNICABLE DISEASES**

**Q.P. Code: 1806**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Critically review the RNTCP program and describe the advantages and limitations/ challenges in implementing RNTCP program in India.
2. Explain web of causation model using obesity as an example. Discuss various control and preventive measure for obesity.

**SHORT ESSAY QUESTIONS:**

**5 X 10= 50**

3. City X reported high incidence of dog bite and rabies cases. Discuss the agent, host, incubation period, clinical features of rabies. As a public health expert what measures would you advice to reduce the incidence of rabies in City X? (note : consider animal rights too while suggesting preventive measure)
4. Discuss acute diarrheal diseases in terms of aetiology, clinical features and preventive measures.
5. Discuss the mental health problem in India and design a mental program.
6. World Health Organization has issued an alert for Japanese encephalitis. As a public health officer how will you identify JE and manage the situation from spreading in your area.
7. Classify diabetes. Briefly describe its risk factors and preventive measures.

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**SECOND SEMESTER - M.Sc. IN PSYCHOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**CHILD PSYCHOPATHOLOGY**

**Q.P. Code: 1938**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS</b>	
1a. Describe the DSM criteria of child psychopathology.	15
Or	
1b. Explain assessment diagnosis and treatment strategies used in child psychopathology.	
2a. Explain the categories and nature of mental retardation of childhood.	15
Or	
2b. Illustrate various communication disorders of childhood.	
3a. Discuss clinical features of Asperger's disorder and Rett's disorder.	15
Or	
3b. Explain encopresis and enuresis in detail.	
4a. Explain different tic disorders expressed during childhood.	15
Or	
4b. Bring out the clinical features of mood disorders and suicide during childhood.	

**Write short notes on any Four of the following** **4 X 5 =20**

5. Attention Deficit Hyperactivity Disorder (ADHD).
6. Sexual abuse of children.
7. Learning disorders of children.
8. Autistic disorder.
9. Eating disorders of infancy.
10. Schizophrenia.

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**SECOND SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION**  
**DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PAPER III: BIOCHEMISTRY**

**Q.P. Code: 1406**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 10 = 20</b>
1. Discuss the sources, formation, transport and disposal of ammonia.	(1+2+2+5)
2. Define Gluconeogenesis. Describe the sources, key reactions and pathway of glucose synthesis from alanine.	(1+2+2+5)
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
3. Explain the process of digestion and absorption of lipids.	
4. What is BMR? Write the measurement and factors affecting BMR.	
5. Describe the sources, RDA and absorption of iron.	
6. Explain the process of beta oxidation of fatty acids. Add a note on its regulation.	
7. Name the hormones regulating blood glucose level. Describe the action of insulin.	
8. Write the significance and anaplerotic reactions of TCA cycle.	
9. What are primary ketone bodies? Explain the pathway of Ketogenesis.	
10. Discuss in detail the general reactions of amino acids.	
11. Describe the nutritional importance of proteins.	
<b>SHORT ANSWER QUESTIONS:</b>	<b>5 X 3 = 15</b>
12. Dietary fibres.	
13. Lactose intolerance.	
14. Pyruvate dehydrogenase complex.	
15. Functions and deficiency manifestations of Selenium.	
16. Define transamination. Give example.	

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**SECOND SEMESTER - M.Sc. IN PSYCHOLOGY  
DEGREE EXAMINATION – DECEMBER 2020**

Time: 3 Hours

Max. Marks: 80

**PERSONALITY PSYCHOLOGY**

**Q.P. Code: 1939**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS</b>	
1a. What is personality? Discuss the five factor model of personality.	15
Or	
1b. Critically evaluate any one structural model of personality.	
2a. Discuss the importance of culture in personality.	15
Or	
2b. Discuss personality in social context.	
3a. Discuss the personality development process in education.	15
Or	
3b. Explain the factors influencing personality development in students.	
4a. Discuss the application of personality tests in job context.	15
Or	
4b. Discuss the relation between personality and crime.	
<b>Write short notes on any Four of the following</b>	<b>4 X 5 = 20</b>
5. Trait approach of personality.	
6. Self-report techniques.	
7. Storied construction of personality.	
8. Personality and politics.	
9. Use of projective technique in personnel selection.	
10. Personality correlates of job performance.	

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